THE MINERAL INDUSTRY OF

NIGERIA

By Philip M. Mobbs

Nigeria remained Africa's largest oil producer in 2000. According to data compiled by the U.S. Department of Energy (2001a), Nigeria ranked 11th in the production of crude petroleum and condensate by volume with about 3% of world production. In 2000, the nation's gross domestic product was estimated to be \$41.1 billion compared with \$34.8 billion in 1999. Most of this increase could be attributed to the surge of international oil prices in 2000. The oil sector, which was the cornerstone of the Nigerian economy, provided most Government revenues and accounted for most of the country's export earnings.

The Government had a number of programs designed to attract local and foreign investments in the development of the nonfuel minerals sector and to broaden the country's industrial base; the country's reputation for civil strife, corruption, environmental degradation, fraud, poor infrastructure, and political uncertainty, however, continued to temper international investors' interest in most projects (Finance Africa, 1997; Metal Bulletin, 1997; Ayittey, 1998; Rupert, 1998; Corzine, 2000; Oil & Gas Journal, 2000; Yakubu Lawal, Guardian, December 24, 2000, Oil companies ordered to Nigerianise operations, accessed December 25, 2000, at URL http://www.ngrguardian news.com/news2/nn807302.html; United Nations Development Programme, March 27, 1992, Fourth country programme for Nigeria, accessed July 1, 1998, at URL http://www.undp.org/ undp/rba/country/cp/3087j.htm). The civil unrest associated with the adoption of Islamic Sharia law in many of the northern States added uncertainty to international mineral projects in northern Nigeria.

Mineral resource companies that operated in Nigeria had to cope with local expectations that the companies should provide extensive physical and social infrastructure despite the infrastructure-building efforts of Government agencies, such as the defunct Oil Mineral Producing Areas Development Commission (OMPADEC), which was formed in 1992 to funnel oil revenues back to the oil-producing communities primarily through public infrastructure programs (Ikenna Nwosu, Guardian, November 1, 2001, Host communities as a potential disincentive to mineral development, accessed November 1, 2001, at URL

http://www.ngrguardiannews.com/business2/ bn838204.htm). Attacks on oil facilities were the preferred method to draw attention to notional injustices and real problems (Oil & Gas Journal, 2000). In 2000, the Nigerian Navy was deployed to escort commercial vessels in the Niger Delta. The movement of the focus of oilfield development farther offshore could reduce future opportunities for armed assaults on oil production facilities and personnel.

Government Policies and Programs

The Mining and Minerals Decree—No. 34 was enacted in 1999. The new law provides for 3-year tax holidays,

exemption from customs duties for mining equipment, convertibility of foreign currency, and free transferability of funds. It also reaffirms that all mineral rights are held by the Federal Government. During 2000, however, reallocation of mineral rights to the individual producing States was debated in the national legislature.

The Ministry of Solid Minerals Development is involved in the promotion, exploration, and development of Nigeria's solid minerals. The Department of Petroleum Resources concerns itself with the oil and natural gas segment of the mineral industry. The Ministry of Power and Steel administers the iron and steel sector. Environmental regulations are administered by the Federal Environmental Protection Agency and the Department of Petroleum Resources. The OMPADEC, which withered away in 1999, in theory had received 3% of the national oil revenue to distribute to the oil-producing States. Disputes concerning distribution of funds resulted in the guarantee in the 1999 Constitution that 13% of national oil revenue was to be paid to oil-producing States. Payments began in 2000; however, legal challenges suspended payments by July.

A Government-mandated fuel-price hike in June 2000 resulted in a 5-day nationwide strike. The price of gasoline was raised to \$0.29 per liter, diesel fuel to \$0.27 per liter, and kerosene to \$0.26 per liter. The strike ended after the Government agreed to reduce fuel prices. The new price of gasoline was lowered to \$0.21 per liter, and kerosene returned to its original \$0.16 per liter.

Trade

In 2000, mineral fuel exports accounted for about 99% of total exports. The value of all Nigerian exports in 2000 was \$20.4 billion; this was up from \$11.9 billion in 1999. Oil exports were valued at \$19.5 billion in 2000 compared with \$11.4 billion in 1999. Liquefied natural gas exports were valued at \$623 million in 2000 compared with \$322 million in 1999. With exports of 319 million barrels of oil to the United States during 2000, Nigeria was America's fifth largest supplier of crude petroleum (U.S. Energy Information Administration, 2001b-i).

Commodity Review

Metals

Aluminum.—Schemes for the reopening of the 193,000-metric-ton-per-year (t/yr)-capacity smelter of Aluminium Smelter Co. of Nigeria Ltd. (ALSCON) at Ikot Abasi were frequently announced; resumption of operations at the 70% state-owned facility, which had closed in June 1999, however, remained restrained by the lack of funding. For most of 2000, negotiations were underway for the privatization of ALSCON and for a new natural gas fuel contract for the smelter (Metal

Bulletin, 2000b, g, i-k; Mining Journal, 1999, 2000; Tola Akinmutumi, staff reporter, Guardian, January 4, 2000, Aluminium producers seek equity participation in ALSCON, accessed January 4, 2000, at URL http://www.ngrguardian news.com/business2/bn772302.htm; Josiah Emerole, Post Express, February 4, 2000, FG set to complete ALSCON... Approves N6.3b for Escravos dredging, others, accessed February 7, 2000, at URL http://www.postexpresswired.com/ postexpress.nsf/24c35a000fe637798525691a0076c2cb/55417b7 e50be68858525687e0034a609?OpenDocument; Guardian, January 3, 2001, ALSCON to sign sales, purchase agreement in February, accessed January 3, 2001, at URL http://www.ngr guardiannews.com/energy/eg808303.html). Reynolds International (a subsidiary of Reynolds Metals Co. until the May 2000 acquisition of Reynolds Metals and its subsidiaries by Alcoa Inc. of the United States) transferred its 10% interest in ALSCON to Ferrostaal (Nigeria) Ltd. after negotiations with the Government for the privatization of ALSCON failed (Delegation of German Industry and Commerce for West Africa, November 20, 2000, Privatisation of ALSCON stalled, accessed October 31, 2001, at URL http://www.ahk-lagos-ng. de/English/DGICNewsUnntenEn.htm). Ferrostaal was to manage the ALSCON plant when operations restart.

VAI Industries Ltd. of the United Kingdom began a 6,000-t/yr rolling-mill capacity-expansion project for First Aluminium plc of Nigeria. First Aluminium announced the renovation would expand its rolling capacity to 12,000 t/yr (Metal Bulletin, 2000d).

Steel.—Like many Nigerian industries, the production operations of the primarily Government-owned steel sector had been severely restrained by the lack of funding and associated transportation problems (Seun Adeoye, Guardian, May 15, 2000, Why steel sector is distressed, by Ige, accessed May 15, 2000, at URL http://www.ngrguardiannews.com/news2/nm785512.html). In 1999, work resumed on a rail line to connect Nigerian Iron Ore Mining Co.'s Itakpe Mine with the steel plant at Ajaokuta and port facilities at Warri (Metal Bulletin, 1999). Construction of the rail link has been intermittent since 1979.

Various proposals for the completion of the Ajaokuta Steel Co. Ltd. plant; the reopening of Delta Steel Co. Ltd.'s plant at Aladja; the restart of the mills of Jos Steel Rolling Co. Ltd., Katsina Steel Rolling Co. Ltd., and Oshogbo Steel Co. Ltd.; and the resumption of mining at the Itakpe Mine were announced (Metal Bulletin, 1999, 2000c, f). Rolling resumed at a reduced rate at the Katsina mill for a few weeks in April (Metal Bulletin, 2000f, h). In November, the Nigerian Privatisation Agency announced that 40% equity interest in the Jos, the Katsina, and the Oshogbo mills would be offered for sale in 2001 (Metal Bulletin, 2000a). The Government allocated \$2 million to each of the mills at Jos, Katsina, and Oshogbo for rehabilitation and to import steel billets to process (Metal Bulletin, 2000e).

Wiedemann & Walters GmbH of Germany reportedly was renovating the light section and the wire rod mill at Ajaokuta (Alifa Daniel, Guardian, January 4, 2001, Austrian firm to refurbish foreign Delta Steel, accessed January 4, 2001, at URL http://www.ngrguardiannews.com/news2/nn808406.html). In December, Vsesojuznoje Importno-Exportnoje Objedieneije Tyazhpromexport of Russia completed a technical audit of the Ajaokuta steel plant. Tyazhpromexport, which had been the general contractor for the Ajaokuta complex from 1979 until

construction ceased in 1994, estimated that the completion of construction and repairs necessary to allow the plant to begin liquid steel production would cost an additional \$600 million (Metal Bulletin, 2000c; Gabriel Agbonika, Post Express, August 22, 2000, Towards reactivating Ajaokuta Steel Company, accessed August 23, 2000, at http://www.postexpress wired.com/ postexpress.nsf/24c35a000fe637798525691a0076c 2cb/697c8f11b26ce3ba85256942003e0f44?OpenDocument).

Tantalum and Tin.—Demand for tantalite surged as the year ended. During the late 1990s, the price had hovered about \$14 per kilogram (Cunningham, 2001). During 2000, because of increased demand by the manufactures of consumer electronics, the price of tantalite rose to \$70 per kilogram in September, and reached \$165 per kilogram by yearend (Metal Bulletin, 2000l; 2001b). In Nigeria, large tantalite and tin concessions were held by State-owned companies; tantalite mining, however, was dominated by small-scale mining operations. Bakuwa Mining Works Ltd. appeared to be the largest legal local producing company. International companies active in tantalite exploration or promotion included Alluvial Dredging & Mining Services N.V. of the Netherlands, CME Managing Consultants Inc. of Canada, Columbia River Resources Ltd. of Canada, and West African Venture Exchange Corp. of Canada.

The Government-owed Nigerian Mining Corp. (NMC) sought investors to finance the development of its tantalite concessions. Consolidated Tin Mines Ltd. (an NMC subsidiary) awaited funding to pay salary arrears and to resume tin mining. Private tin minismelters filled in for the closed Makeri tin smelter (Metal Bulletin, 2001a).

Industrial Minerals

Cement.—Disputes marred the privatization process, but by vearend, the Government had successfully divested its interest in four cement companies. Blue Circle Industries Ltd. of the United Kingdom increased its equity ownership of West African Portland Cement Co. (WAPCO) with the December 1999 acquisition of 12% of the WAPCO shares from the Government. WAPCO was building a \$130 million 1-millionmetric-ton-per-year (Mt/yr)-capacity cement plant in Ewekoro to augment the combined 1.6-Mt/yr capacity of its old plants at Ewekoro and Sagamu (Ade Ogidan, Guardian, October 11, 2000, WAPCO to boost operational profile with new plant, accessed October 11, 2000, at URL http://www.ngrguardian news.com/business2/bn799808.html). In January 2000, Unión Marítima International S.A. of Spain acquired 40% of the shares of Eastern Bulkcem Co., which operated a bulk cement terminal in Port Harcourt. In March, Blue Circle bought 26% of the shares of Asahaka Cement Co. plc from the Government after which Blue Circle controlled 51% of the shares of Asahaka. Dangote Industries Ltd. of Nigeria secured the controlling shares of Benue Cement Co. plc (BCC) that were made available when the Government privatized its 35% interest in the company. Fire damage subsequently closed BCC for 3 months. The plant reopened in December. In July, Scancem International ANS of Norway acquired the Government's 40% interest in the Cement Company of Northern Nigeria.

Nitrogen.—National Fertilizer Co. (NAFCON) had ceased production at its plant in Onne, Rivers State, in 1999. NAFCON announced that Kellogg Brown & Root, Inc. would

rehabilitate the plant (Godwin Egba, Post Express, October 17, 2000, NAFCON to begin production next year, accessed October 24, 2000, at URL http://www.postexpresswired.com/ postexpress.nsf/ 24c35a000fe637798525691a0076c2cb/ 7edf90d172bcf26d8525697e0037ca92?OpenDocument).

Mineral Fuels

Bitumen.—Fast track development of the bitumen deposits in southwestern Nigeria stalled. In July 1999, the Government received about 22 bids on the 15 bitumen exploration and development blocks offered, but leases were not assigned nor were licenses issued. In early 2000, the Government began an environmental impact assessment of the proposed bitumen project area and continued its review of applicable regulations begun after the 1999 lease sale. In October, the Ministry of Solid Minerals Development announced that a new State-owned company would be formed to oversee bitumen exploration and development (Alifa Daniel, Guardian, October 12, 2000, Govt to form agency for bitumen project, accessed October 12, 2000, at URL http://www.ngrguardiannews.com/news2/ nn799922.html). In December, the Government proposed a year-long seismic survey of project area, which would prohibit lease assignment until 2002 at the earliest.

Coal.—Nigerian Coal Corp. began limited production of smokeless coal briquettes that linked Government programs to increase coal production and to reduce household dependence on firewood, kerosene, and liquid petroleum gases. Product distribution was reported in Abuja and Enugu (Alifa Daniel, Guardian, October 15, 2000, Coal briquettes flood Abuja, accessed October 15, 2000, at URL http:// www.ngrguardian news.com/news2/nn800312.html).

Natural Gas and Petroleum.—Nigeria Liquified Natural Gas Ltd. began production from Train One in February at its plant at Finima on Bonny Island. Train Two had gone online in September 1999.

Petroleum prospects on which significant discovery or appraisal wells were drilled during 1999 and 2000 included the Ehra prospect in 1,180 meters (m) of water on Oil Prospecting Lease (OPL) 209; the Agbani prospect, about 360 kilometers southwest of Lagos in 1,460 m of water, straddled OPL 216 and 217; the Ikija prospect on OPL 216; the Ekoli prospect on OPL 217; and the Akpo prospect on OPL 246. Shell Nigeria Exploration and Production Co. Ltd. and a local subsidiary of Exxon Mobil Corp. were partners on Block 209. Joint-venture partners on OPL 216 included Famfa Oil Ltd., Nigerian National Petroleum Corp., Petroleo Brasileiro Nigeria Ltd., and Star Deep Water Petroleum Ltd. Partners on Block 217 included Nigerian National Petroleum Corp., Statoil A/S, and Texaco Nigeria Outer Shelf Ltd. TotalFinaElf Group operated OPL 246 for partners South Atlantic Petroleum Ltd. and Petroleo Brasileiro S.A. Nigeria. Onshore, Shell Petroleum Development Co. Ltd. discovered oil on the Soku North prospect in Rivers State.

For general background coverage of the oil and gas sector in Nigeria, see the U.S. Energy Information Administration's April 2001 Nigeria Country Analysis Brief at URL http://www.eia.doe.gov/emeu/cabs/nigeria.html.

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- 2001f, Table 3.3e—Petroleum imports from Angola, Australia, Bahamas, Brazil, Canada, and China: U.S. Energy Information Administration, Monthly Energy Review, September, p. 52.
- 2001g, Table 3.3f—Petroleum imports from Colombia, Ecuador, Gabon, Italy, Malaysia, and Mexico: U.S. Energy Information Administration, Monthly Energy Review, September, p. 53.
- 2001h, Table 3.3g—Petroleum imports from Netherlands, Netherlands Antilles, Norway, Puerto Rico, Russia, and Spain: U.S. Energy Information Administration, Monthly Energy Review, September, p. 54.

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Major Sources of Information

Ministry of Solid Minerals Development New Secretariat Complex Annex 3, 5th Floor Abuja, FCT Nigeria Telephone: (234 9) 523-9063 Fax: (234 9) 523-5830

Fax: (234 9) 523-5830 Ministry of Power and Steel Federal Secretariat Complex Annex 3 Shehu Shagari Way Abuja, FCT Nigeria

Telephone: 234-9-523-7064 Fax: 234-9-523-6652

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TABLE 1 NIGERIA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1996	1997	1998 e/	1999 e/	2000 e/
METALS					
Aluminum		2,500 e/	20,000	16,000	
Columbium and tantalum concentrates: e/					
Gross weight	57 4/	60 4/	70	70	80
Columbium content	23	23	30	30	35
Gold e/ kilograms	6	6	10	10	10
Iron and steel: e/					
Iron ore, gross weight thousand tons	100	50			
Steel, crude do.			2		
Lead, metal, refined e/ do.	4	4	5	5	5
Tin:					
Mine output, cassiterite concentrate:					
Gross weight	139	150	200	200	300
Sn content e/	100	100	130	130	200
Metal, smelter	100	100	150	50	50
INDUSTRIAL MINERALS					
Barite 5/		4,000 e/	5,000 4/	5,000	5,000
Cement, hydraulic thousand tons	2,545	2,520 e/	2,700	2,500	2,500
Clays:					
Kaolin	102,078	100,000	110,000	110,000	110,000
Unspecified e/	100,000	100,000	100,000	100,000	100,000
Feldspar	800	1,000	500	500	600
Gypsum	383,250	300,000 e/	300,000	200,000	30,000
Nitrogen: e/		,	,	,	,
N content of ammonia thousand tons	164	134	167	148 r/	
N content of urea do.	114	41	105	100	
Stone:					
Limestone do.	2,095	2.000 e/	2.000	2,000	2.000
Marble do.	29	30	30	30	30
Shale e/ do.	500	500	500	500	500
Topaz e/ kilograms	1,500	1.000 r/	1.700	2,500 r/	2,000
MINERAL FUELS AND RELATED MATERIALS	1,500	1,000 1/	1,700	2,300 1/	2,000
Coal, bituminous	7,116	7,000	30,000	30,000	35,000
Gas, natural: e/	7,110	7,000	30,000	30,000	33,000
Gross million cubic meters	37,000	30,000	30,000	30,000	30,000
Dry do.	6,000	5,400	6,000	7,000	13,000
Petroleum:	0,000	3,400	0,000	7,000	13,000
Crude thousand 42-gallon barrels	798,620	845,000	788,000	777,000	783,000
Refinery products:		843,000	788,000	777,000	783,000
Gasoline do.	23,000 e/	47,800	18,300 r/	10,000	25,000
Jet fuel e/ do.	25,000 e/ 300	3,650	2,200 r/	1,000	2,000
Kerosene do.	10,000 e/	21,200	6,200 r/	6,000	10,000
Distillate fuel oil do.	20,000 e/	22,300	18,300 r/	9,000	20,000
Residual fuel oil do.	· · · · · · · · · · · · · · · · · · ·			,	
	18,000 e/	28,100	11,700 r/	12,000	18,000
Unspecified do.	8,000 e/	15,300	17,500 r/	5,000	15,000
Total do.	79,300 e/	138,000	74,200 r/	43,000	90,000

e/Estimated. r/Revised. -- Zero.

^{1/} Includes data available through October 10, 2001.

^{2/} Estimated data were rounded to no more than three significant digits; may not add to totals shown.

^{3/} In addition to the commodities listed, amethyst, aquamarine, bitumen, diamond, emerald, garnet, granite, lead, phosphate rock, sapphire, soda ash, talc, tourmaline, tungsten, zinc, and zircon are mined, and a variety of crude construction materials (stone, sand and gravel) are produced; but infomation is inadequate to estimate output. 4/ Reported figure.

^{5/} Considerably more barite is produced, but is considered to be commercially unusable.